

IN THE CLAIMS:

1. (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing accelerated data storage and retrieval, said method steps comprising:

receiving a data stream at an input data transmission rate which is greater than a data storage rate of a target storage device;

compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device ~~ratio which provides a data compression rate that is greater than the data storage rate;~~ and

storing the compressed data stream in the target storage device,

wherein the input data stream comprises one or more data blocks, and

wherein the instructions for performing compression comprise instructions for:

(a) compressing an input data block with a plurality of encoders to provide a set of encoded data blocks;

(b) determining a compression ratio for each of the encoded data blocks;

(c) comparing each compression ratio with an *a priori* specified compression threshold;

(d) selecting for output an encoded data block in the set having the highest compression ratio and appending a corresponding descriptor, if at least one of the compression ratios exceeds the *a priori* specified compression threshold; and

(e) repeating steps (a) through (d) for each successive input data block.

2. (Currently Amended) The program storage device of claim 1, wherein the compression rate ~~ratio~~ is at least equal to the ratio of the input data transmission rate to the data storage rate so as to provide continuous storage of the input data stream at the input data transmission rate.

3. (Original) The program storage device of claim 1, further including instructions for performing the steps of:

determining the input data transmission rate and the data compression rate;

comparing the input data transmission rate, the data compression rate and the data storage rate to determine if they are compatible; and

adjusting one or more parameters to obtain compatibility between the input data transmission rate, the data compression rate and the data storage rate, if they are determined to be incompatible.

4. (Currently Amended) The program storage device of claim 3, wherein the instructions for performing the adjusting step include instructions for performing one of adjusting the input data transmission rate, adjusting the compression rate ratio and a combination thereof.

5. (Original) The program storage device of claim 4, wherein the instructions for performing the adjusting step further include instructions for temporarily buffering one of the input data stream, the compressed data stream, and a combination thereof.

6. (Currently Amended) The program storage device of claim 1, further including instructions for performing the steps of:

retrieving the compressed data stream from the target storage device at a rate equal to a data access rate of the target storage device; and

decompressing the compressed data at a decompression rate that increases the effective ratio to provide an output data stream having an output transmission rate which is greater than the data access rate of the target storage device.

7. (Currently Amended) The program storage device of claim 6, wherein the decompression rate ratio is equal to the ratio of the data access rate to the input data transmission rate so as to obtain an output data transmission rate which is equal to the input data transmission rate.

8. (Currently Amended) The program storage device of claim 6, wherein the decompression rate ratio is equal to or greater than the ratio of the data access rate to a maximum accepted output data transmission rate so as to provide a continuous and optimal data output transmission rate.

9. (Original) The program storage device of claim 6, further including instructions for performing the steps of:

determining the data retrieval rate and the data decompression rate;

comparing the data retrieval rate, the data decompression rate and the output data transmission rate to determine if they are compatible; and

adjusting one or more parameters to obtain compatibility between the data retrieval rate, the data decompression rate and the output data transmission rate if they are determined to be incompatible.

10. (Currently Amended) The program storage device of claim 9, wherein the instructions for performing the adjusting step include instructions for performing one of adjusting the data retrieval rate, adjusting the decompression ~~rate~~ ratio, and a combination thereof.

11. (Original) The program storage device of claim 9, wherein the instructions for performing the adjusting step include instructions for temporarily buffering one of the retrieved data stream, the decompressed data stream, and a combination thereof.

12. (Canceled)

13. (Canceled)

14. (Currently Amended) The program storage device of claim ~~1~~ 13, further including instructions for selecting for output the input data block and appending a null descriptor to the input data block ~~is~~ if all of the compression ratios of the corresponding encoded data blocks fall below the *a priori* compression limit

15. (Currently Amended) The program storage device of claim ~~1~~ 13, wherein the instructions for the compressing step include instructions for simultaneously compressing the data block with a plurality of encoders in parallel.

16. (Currently Amended) The program storage device of claim 1 ~~13~~ wherein the instructions for performing the compressing step include instructions for sequentially compressing the data block with the plurality of encoders.

17. (Currently Amended) The program storage device of claim 6 ~~12~~, wherein the instructions for performing the decompressing step include instructions for performing the steps of:

- (a) extracting an encoding type descriptor from an input data block;
- (b) decompressing the data block in accordance with a decoder corresponding to the extracted descriptor; and
- (c) repeating steps (a) and (b) for each successive input data block.

18. (Original) The program storage device of claim 17, further including instructions for outputting the input data block if the extracted descriptor is a null descriptor.

19. (New) A method for providing accelerated data storage and retrieval, comprising: receiving a data stream at an input data transmission rate which is greater than a data storage rate of a target storage device;

compressing the data stream at a compression rate that increases the effective data storage rate of the data storage device; and

storing the compressed data stream in the target storage device,

wherein the input data stream comprises one or more data blocks, and

wherein the instructions for performing compression comprise instructions for:

- (a) compressing an input data block with a plurality of encoders to provide a set of encoded data blocks;
- (b) determining a compression ratio for each of the encoded data blocks;
- (c) comparing each compression ratio with an *a priori* specified compression threshold;
- (d) selecting for output an encoded data block in the set having the highest compression ratio and appending a corresponding descriptor, if at least one of the compression ratios exceeds the *a priori* specified compression threshold; and
- (e) repeating steps (a) through (d) for each successive input data block.

20. (New) The method of claim 19, wherein the compression rate is at least equal to the ratio of the input data transmission rate to the data storage rate so as to provide continuous storage of the input data stream at the input data transmission rate.

21. (New) The method of claim 19, further comprising the steps of:
determining the input data transmission rate and the data compression rate;
comparing the input data transmission rate, the data compression rate and the data storage rate to determine if they are compatible; and
adjusting one or more parameters to obtain compatibility between the input data transmission rate, the data compression rate and the data storage rate, if they are determined to be incompatible.

22. (New) The method of claim 21, wherein adjusting comprises one of adjusting the input data transmission rate, adjusting the compression rate and a combination thereof.